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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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01/24/2001

Robert John Tinsley

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3806

25297

7590

12/14/2004

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EXAMINER

NGUYEN, STEVEN H D

ART UNIT

PAPER NUMBER

2665

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/768,881

Applicant(s)

TINSLEY ET AL.

Examiner

Steven HD Nguyen

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/04, 10/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 9/2/04 has been entered.

Claim Objections

2. Claims 7, 21, 25, 38 and 31 are objected to because of the following informalities:

As claim 25, line 8, "SS7" must be deleted.

As claims 7 and 21, line 1, "routing element" must be deleted so that the preamble of the claims can be consistent with each other.

As claims 38 and 41, line 1, "signaling message routing" must be deleted so that the preamble of the claims can be consistent with each other.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 2665

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 7-9, 16, 22, 25, 27-28, 30, 32 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shmulevich (USP 6515985) in view of Glitho (USP 6178181) and Reaves (USP 6487286).

Regarding claims 1, 7, 22, 25, 27-28, 30, 32 and 44, Shmulevich discloses (Figs 2-8 and col. 1, lines 10 to col. 14, lines 22) a distributed call signaling message routing gateway comprising a first distributed gateway routing element (Fig 6, Ref 74) including a first interface for sending SS7 call signaling messages to and receiving SS7 call signaling messages from a first SS7 network element (Fig 6, Ref 28) and for performing SS7 routing functions for the SS7 messages received from the first SS7 network element and a second interface for sending the SS7-routed messages over a virtual bus (Fig 6, Ref 76) and at least one second distributed gateway routing element (Fig 6, Ref 78) including a first interface for receiving the SS7-routed messages from the first distributed gateway routing element and a second interface for SS7-routing the received messages to a second SS7 network element (Fig 6, Ref 54) via an SS7 signaling link and the SS7 call signaling messages sent over the second interface include a plurality of different message types and wherein setting quality of service parameters includes determining a required quality of service parameter for each SS7 call signaling message sent over the second interface based on the message type of each SS7 call signaling message (Fig 8, ref 178, QOS manager for setting a priority for a packet to be routed via internet according difference service level of the received signaling message type such ISUP, see col. 7, lines 47-48 and TCAP, see col. 8, lines 10-13, see col. 14, lines 15-18). However, Shmulevich fails fully to disclose a step of setting quality of service parameters in the SS7-routed messages sent over the

Art Unit: 2665

virtual bus in a field of internet protocol and the first and second distributed gateway routing elements are adapted to be located at geographically diverse locations and to share an ss7 point code and thereby function as a geographically distributed STP associated with different SS7 signaling points. In the same field of endeavor, Glitho discloses (Figs 3-5 and col. 2, lines 5 to col. 6, lines 10) a step of setting quality of service parameters such as TTL and TOS in the SS7-routed messages such as TCAP, ISDN "ISUP" and MAP sent over the virtual bus (Fig 3-5, the signaling message transmits to the second gateway from the first gateway and setting the quality of service parameters such as TTL and TOS for IP packet wherein Fig 3 discloses MAP and TCAP signaling message, wherein it is well known in the art that a TOS field Bits 0-2 are used to indicate Precedence, Bit 3 is used to indicate Delay (D) (0=Normal Delay; 1=Low Delay.), Bit 4 is used to indicate Throughput (T) (0=Normal Throughput; 1=High Throughput), Bit 5 is used to indicate Reliability (R) (0=Normal Reliability; 1=High Reliability), and Bits 6-7 are reserved for future use) and Reaves discloses the first and second distributed gateway routing elements are adapted to be located at geographically diverse locations and to share an ss7 point code and thereby function as a geographically distributed STP associated with different SS7 signaling points (Fig 2 discloses a plurality of shelves "routing gateways, 60, 62-64, 66 and 70 shared same point code PC 01" which is geographically distributed at a diverse locations and shared an SS7 point code "PC 01" in order to function as a geographically distributed STP associated with different SS7 signaling point "SSP and SCP"; See col. 6, lines 35-56 and col. 8, lines 15-47, these shelves is connected with each other and SCPs via ATM or IP).

Since, Shmulevich discloses a QOS management to set packet priorities associated with different service levels offered by the network for linking a plurality of STPs. Therefore, it

Art Unit: 2665

would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a gateway with SCCP-IP mapping function which is used to set the QOS parameter into a field of internet protocol as disclosed by Glitho's system and distributing plurality of geographic shelves which are function as a STP having a same point code as disclosed by Reaves's system for into Shmulevich's system. The motivation would have been to obtain a high reliability way to transmit a SS7 message via data network and reduce the cost of operating a CCS system.

Regarding claim 2, Shmulevich discloses the first interfaces of the first and second distributed gateway routing elements include SS7 MTP layer 3 routing functions for routing SS7 messages based on SS7 point codes (Fig 8, Ref 158).

Regarding claim 3, Shmulevich discloses the first interfaces of the first and second distributed gateway routing elements are adapted to route messages based on circuit identification codes (Fig 8, Ref 186 and col. 13, lines 35-49 using CIC to select an internet protocol port to route incoming and out going call between the MSCs).

Regarding claim 8, Shmulevich discloses quality of service manager processes for setting the quality of service parameters in the SS7-routed messages to be transmitted over the virtual bus (Fig 8, Ref 178).

Regarding claim 9, Shmulevich discloses the first and second distributed gateway routing elements are co-located with the first and second SS7 network elements (Fig 6, Ref 28 and 54).

Regarding claim 16, Shmulevich discloses at least one of the first and second distributed gateway routing elements are co-located with more than one SS7 network element (Fig 2, MSCs).

Art Unit: 2665

5. Claims 4-6, 10-15, 23-24, 26, 29, 37 and 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shmulevich, Reaves and Glitho as applied to claims 1, 25 and 30 above, and further in view of Krishnamurthy (EP 1054568).

Regarding claims 10-13 and 26, Shmulevich, Reaves and Glitho do not fully disclose the claimed invention. However, Krishnamurthy discloses the first and second distributed gateway routing elements are co-located with service switching points (SSPs); service control points (SCPs); at least one of the first and second distributed gateway routing elements is co-located with a signal transfer point (STP) (Fig 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to place a gateway with SSP, STP, SCP as disclosed by Krishnamurthy's system into the system of Shmulevich and Glitho. The motivation would have been to obtain a high reliability way to transmit a SS7 message via data network.

Regarding claims 4-6, Shmulevich, Reaves and Glitho fail to disclose the claimed invention. However, The examiner takes an official notice that a first interfaces are adapted to screen the SS7 call signaling messages based on one or more SS7 message parameters; copy the SS7 call signaling messages and forward the copies to a predetermined network monitoring or accounting node; a triggerless number portability process for identifying call signaling messages relating to calls to ported numbers and for overriding the SS7 routing functions for the call signaling messages related to calls directed to ported numbers are well known and expected in the art at the time of invention was made to apply into the system of Shmulevich, Reaves and Glitho. The motivation would have been to obtain a high reliability way to transmit a SS7 message via data network.

Art Unit: 2665

Regarding claims 14-15, Shmulevich, Reaves and Glitho fail to disclose the claimed invention. However, The examiner takes an official notice that the first and second distributed gateway routing elements are co-located with a softswitch; an application server are well known and expected in the art at the time of invention was made to apply into the system of Shmulevich, Reaves and Glitho. The motivation would have been to obtain a high reliability way to transmit a SS7 message via data network.

Regarding claims 23-24 and 29, Shmulevich, Reaves and Glitho fail to disclose an OAM server for coupling to the gateways via SNMP interface. However, The examiner takes an official notice that OAM server is well known and expected in the art at the time of invention was made to apply an OAM server into the system of Shmulevich, Reaves and Glitho. Since, Shmulevich suggests the SNMP interface being located at the gateway. The motivation would have been to generate an alarm signal etc.

Regarding claims 37 and 41-42, Shmulevich, Reaves and Glitho fail to disclose a step of exchanging the status information between the routing elements. However, The examiner takes an official notice that a method and system for exchanging the status information between the routing element is well known and expected in the art at time of invention was made to establish or update a routing table in the routing elements. The motivation would have been to route the SS7 message via Internet.

6. Claims 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shmulevich, Reaves and Glitho as applied to claims 1, 25 and 30 above, and further in view of Valentine (USP 6327267)

Shmulevich, Reaves and Glitho fail to disclose the claimed invention. However, in the same field of endeavor, Valentine discloses a translation services module (translating GTT into IP address, See col. 9, lines 35-46 for routing a message to signaling node or a packet node) for using to coupled to the first and second distributed gateway routing elements via the virtual bus for translating SS7-routed messages; the translation services module is adapted to perform global title translation services for the SS7-routed messages; directory number to Internet protocol address mapping for the SS7-routed messages; number portability translation services for the SS7-routed messages. Therefore, it would have been obvious to one of ordinary skill in the art to apply a translating module as disclosed by Valentine's method and system into the system of Shmulevich, Reaves and Glitho because Shmulevich suggests the use of GTT. The motivation would have been to turn a data network into a signaling network for routing a telephone call to a signaling node or packet node and reduce the cost for customer.

7. Claims 31, 33-36, 38-40, 43 and 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shmulevich, Reaves and Glitho as applied to claims 1, 25 and 30 above, and further in view of Madour (USP 6611532).

Shmulevich, Reaves and Glitho fail to disclose IPv6 and MPLS protocol for encapsulating the signaling message for transmitting via Internet with priority, label, and QOS parameters. However, in the same field of endeavor, Madour discloses a gateway for converting a ss7 message into a MPLS message by encapsulating the Ipv6, Ipv4 packet using a MPLS (fig 10). Since, IPV6 and MPLS are well known and expected in the art at the time of invention was made to apply these protocols into Shmulevich, Reavens and Glitho because these protocol includes a field for setting a QOS parameter such COS for MPLS which included in FEC or flow

Art Unit: 2665

label for IPv6. The motivation would have been to provide a high reliability way to transmit a SS7 message via data network because the internet network would cause a delay or discard the small packet that does not set a priority, QOS, increases the number nodes on the node work by using Ipv6 because it provides more address than Ipv4 and Mpls provides a method for reduce the time of computing the network resource.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Aggarwal (USP 6330614) disclose a detail of Ipv4, Ipv6 and MPLS header which include the field for setting the QOS parameters according the service level before forwarding onto the packet network.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven HD Nguyen whose telephone number is (571) 272-3159. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2665

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'SHN', with a long horizontal line extending to the right.

Steven HD Nguyen
Primary Examiner
Art Unit 2665
12/3/04